

# THE TIMEKEEPER

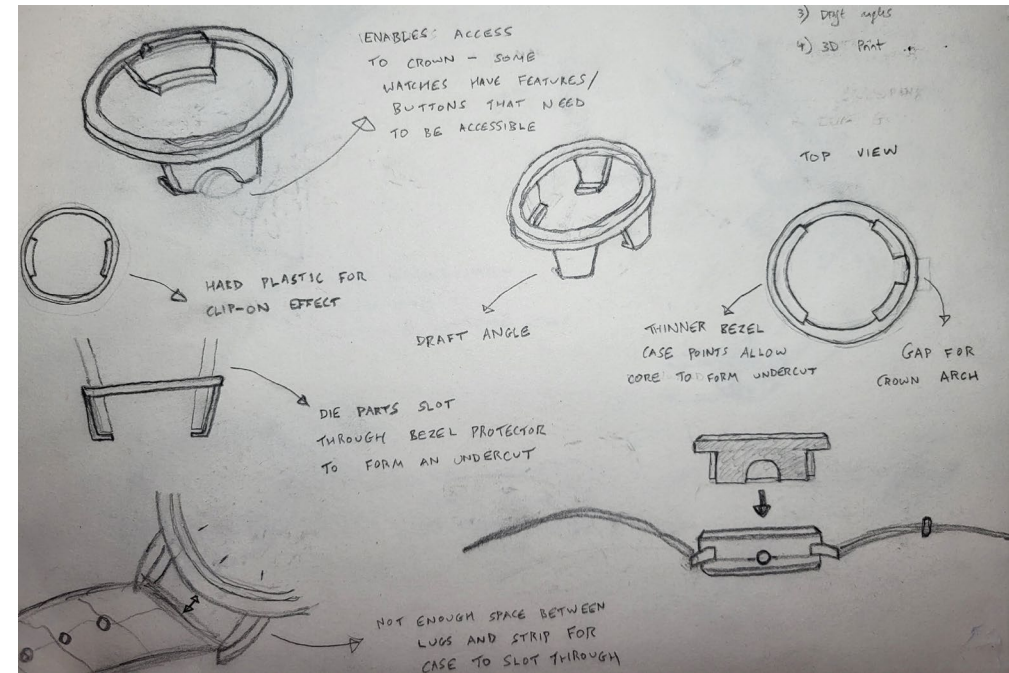
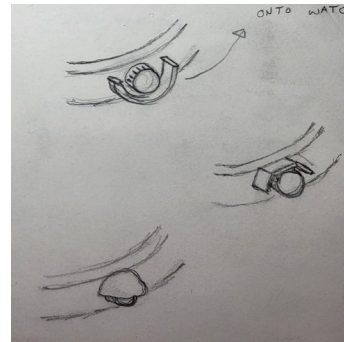
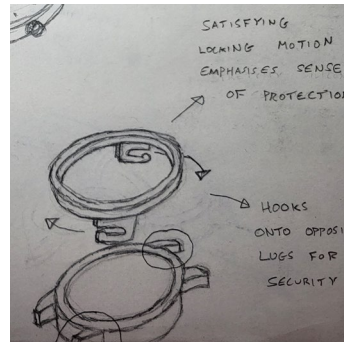
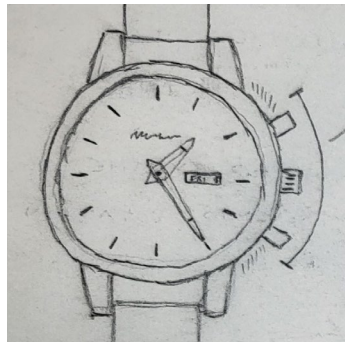
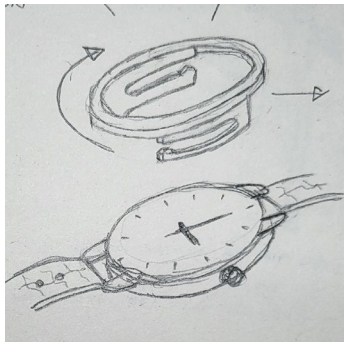
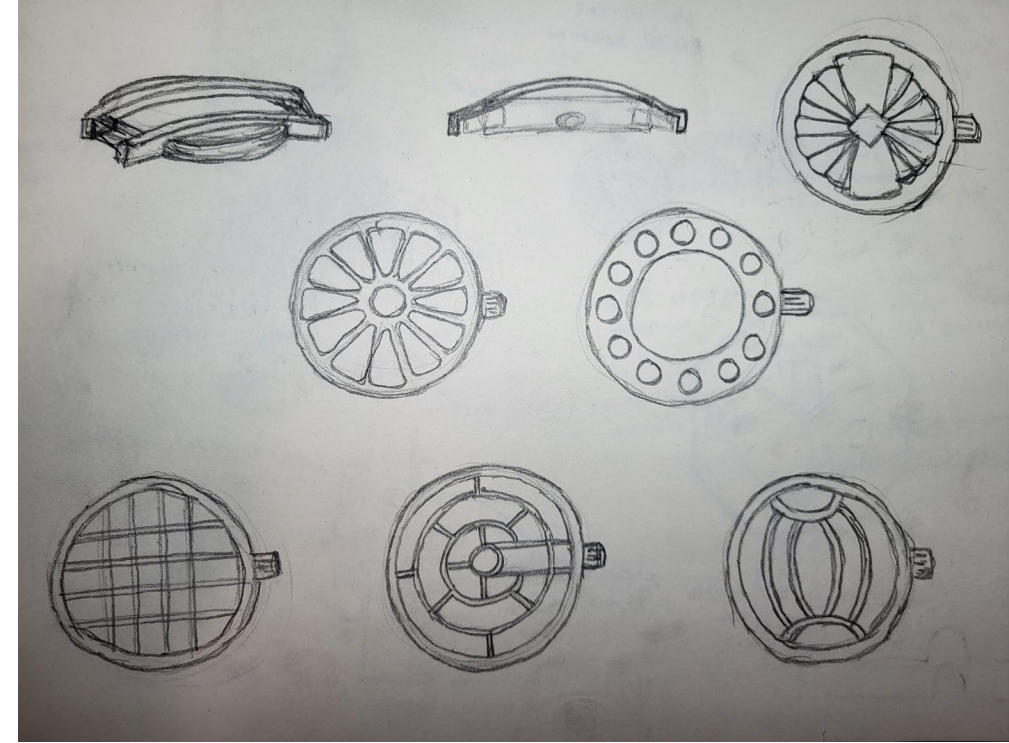


# BRIEF AND INITIAL IDEAS

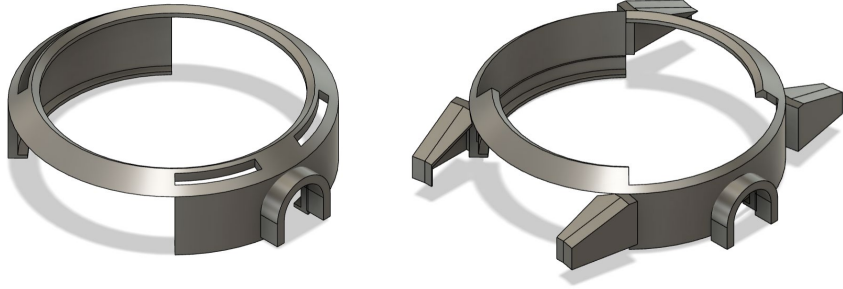
**Project Brief: your challenge is to create and present a design concept for a simple object optimized for injection moulding in silicone.**

**Of all my initial ideas, a clip-on watch case interested me the most as a challenging project with commercial potential. Although a mass-produced, injection moulded case would need to fit various case shapes and sizes, I realised it would be different to make such a product to a high quality within the time provided.**

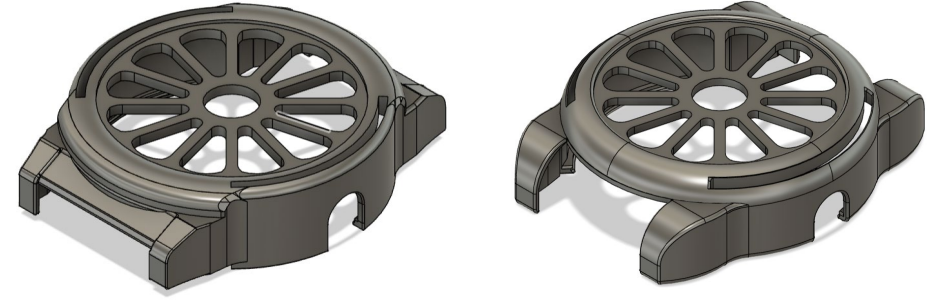
**I therefore determined that I would design one for my watch specifically and then develop it into a more versatile case with any remaining time I had. Thus, I began to conceptualise different style cases through quick sketching.**



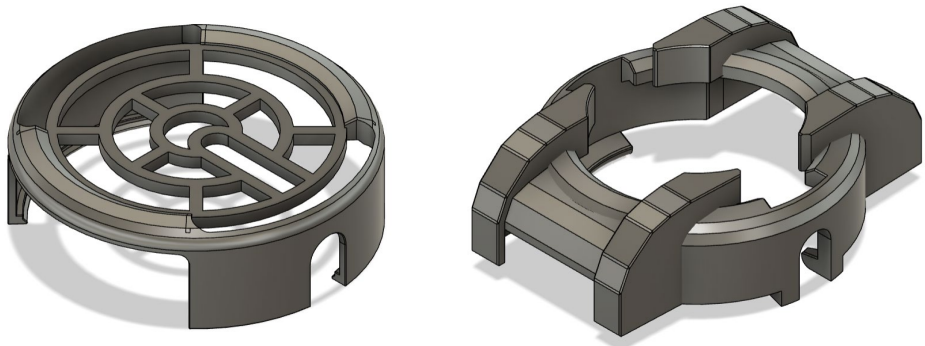
# CAD DEVELOPMENT



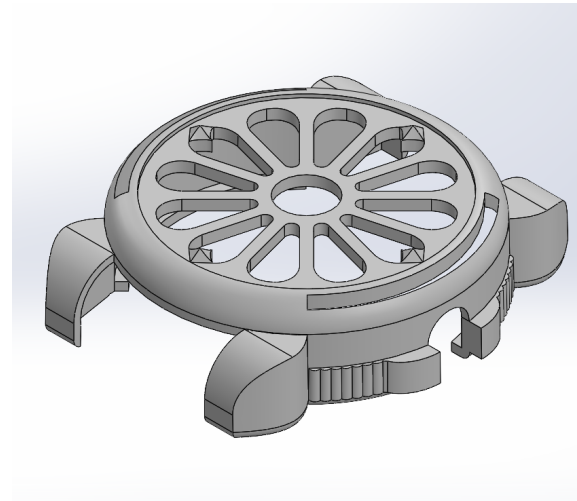
**1) Initial attempts to figure out dimensions and practicalities of the clipping mechanism. Also beginning to conceptualise aspects of the case such as the crown guard and lug protectors.**



**3) Refining the details of the casing and shifting from angularity to a smoother geometric that also suits vintage watches.**



**2) Experimenting with form and the extremes of simplicity and complexity. Starting to incorporate crystal covers inspired by WW1 shrapnel covers for additional personality and aesthetic.**



## **4) FINAL PROTOTYPE**

**Consists of a smooth geometric structure, floral pattern crystal cover, curved crown guard, bezel grips, and hour markers.**

**This model combines the most aesthetic and functional components of various designs. It is fully mouldable with the bezel gaps allowing the undercut to be formed.**

# 3D PRINT MODELLING

I decided to develop my ideas via 3D printing due to high accuracy levels and ease of altering CAD designs. The PLA filament that the printers use have a much higher Shore A hardness than the silicone I intended to use for my final model so I knew that adjustments would have to be made for the printed prototypes. This made it a good test for the flexibility of the clips. It also enabled me to analyse the aesthetic benefits and downfalls of certain features. I therefore learnt which dimensions and detailing were most effective.

I also printed a test prototype in TPU, which has a lower Shore A than PLA, with enlarged clips to compare the flexibility levels. I learnt a lot from this model as it showed potential for a very secure clipping mechanism.

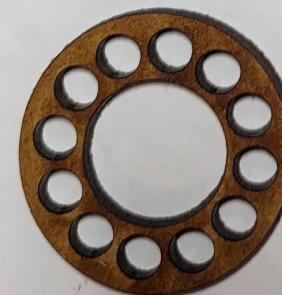


# LASER CUTTER MODELLING

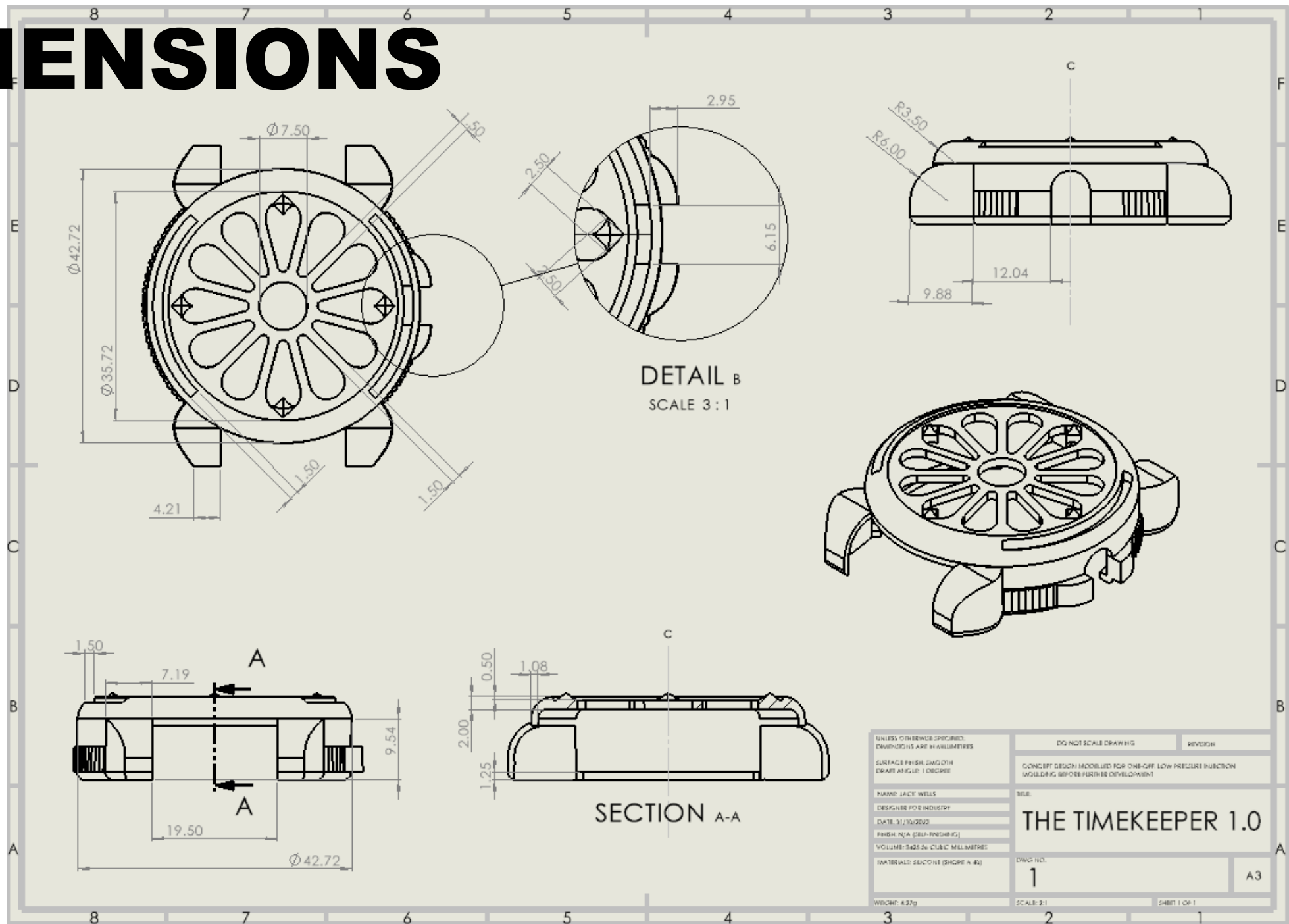
I decided to start my modelling by laser cutting different crystal covers based on WW1 shrapnel covers out of 3mm Medite. I chose laser cutting for the speed and accuracy of the process. My intention was to find a cover design that could protect the watch face whilst leaving the important details visible.

Initially, I focused on only leaving the hour markers visible, but I am now considering ways of leaving the view of the date and possibly the watchmaker name unobstructed.

From these models, I gained a comprehension of what cover would work aesthetically and functionally. I also learnt what geometrical patterns were stronger and could protect the watch face from more impact.



# DIMENSIONS



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETRES	DO NOT SCALE DRAWING	REVISION
SURFACE FINISH: SMOOTH DRAFT ANGLE: 1 DEGREE	CONCEPT DESIGN MODELLIED FOR ONE-OFF, LOW PRESSURE PRODUCTION WOULD BE WIPED FOR FURTHER DEVELOPMENT	
NAME: JACE WELLS	TITLE:	
DESIGNER: POE INDUSTRY	THE TIMEKEEPER 1.0	
DATE: 31/10/2022	DWG NO.:	
FINISH: N/A (3D PRINTING)	1	
VOLUME: 3425 IN CUBIC MILLIMETRE	SCALE: 3:1	
MATERIALS: SEACONE (SHORE A 40)	SHEET 1 OF 1	
WEIGHT: 427g	A3	

# MOULDING

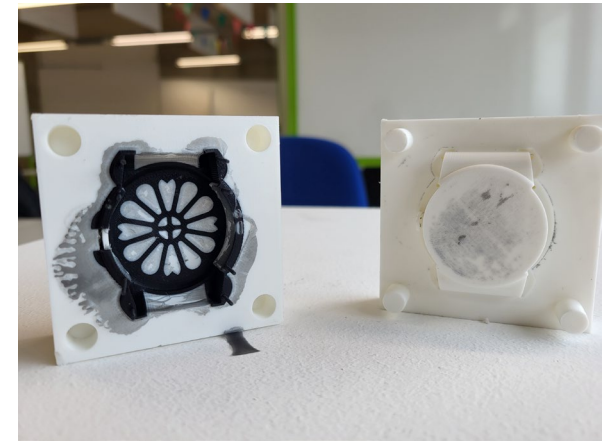
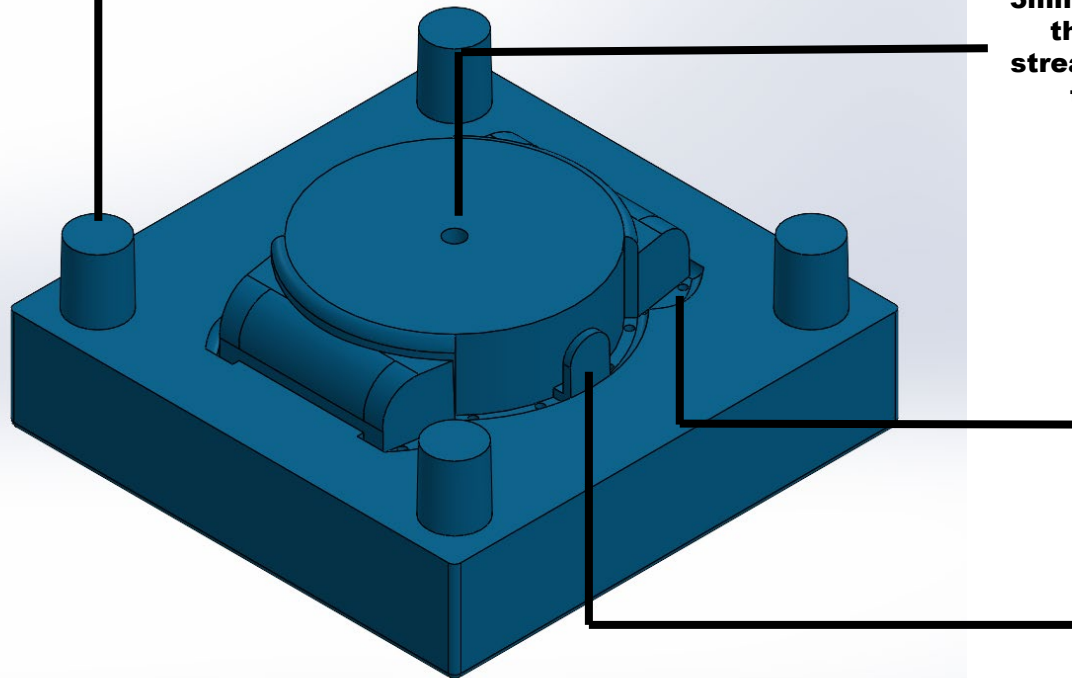
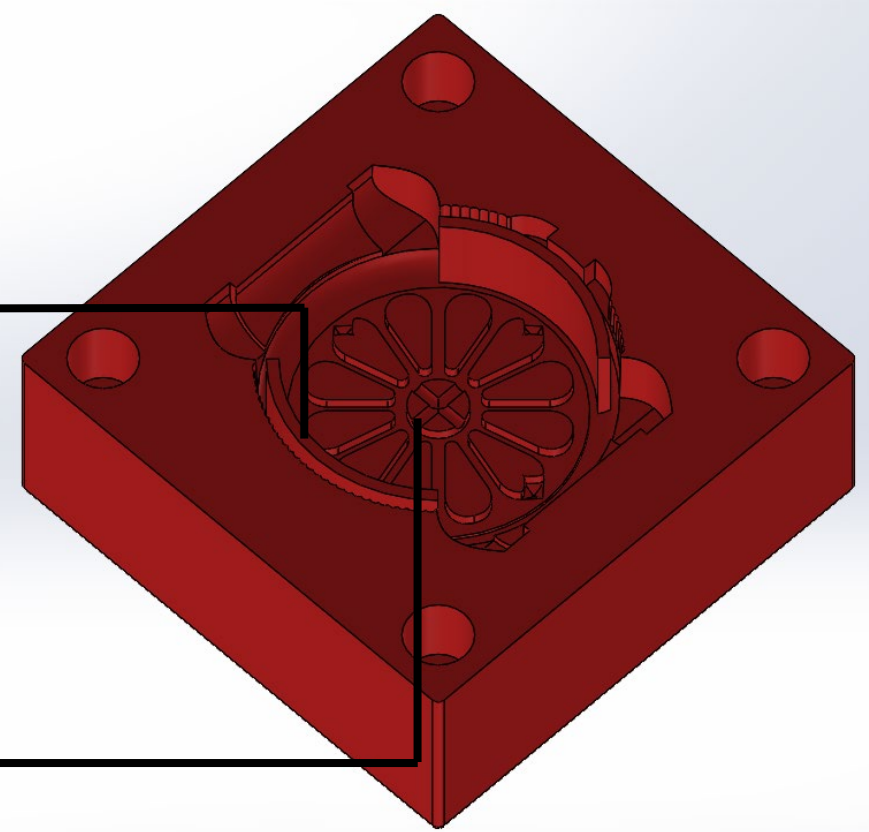
These two protrusions cut through the bezel to create the undercut of the clips

Guidance pins help line the moulds up to prevent any leaking or inaccuracies with a 0.25mm tolerance for friction fit

3mm injection point goes through the core and diverges into 4 streams in the cavity to minimise the chance of air bubbles

1.2mm vents dotted around the core base allow bubbles to escape and prevent structural weaknesses

Crown hole included in core to allow the part to be removed



# PRODUCT DESCRIPTION

**The Timekeeper is a silicone watch case that protects all valuable components of your beloved timepiece with a simple stretch and snap attachment system. The sleek design minimises the aesthetic impact it has on your watch whilst also leaving the time visible and crown accessible.**

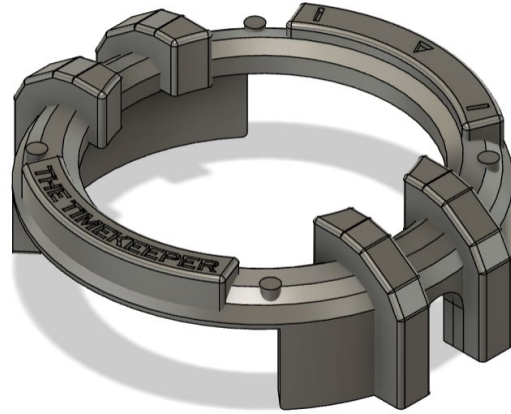
**About to engage in an activity that could result in damage to your watch? The Timekeeper is a practical alternative that allows you to wear your watch with confidence. Simply push the case down onto the bezel of your watch until you hear it clip around the casing and go!**



***Stretch. Snap. Secure.***

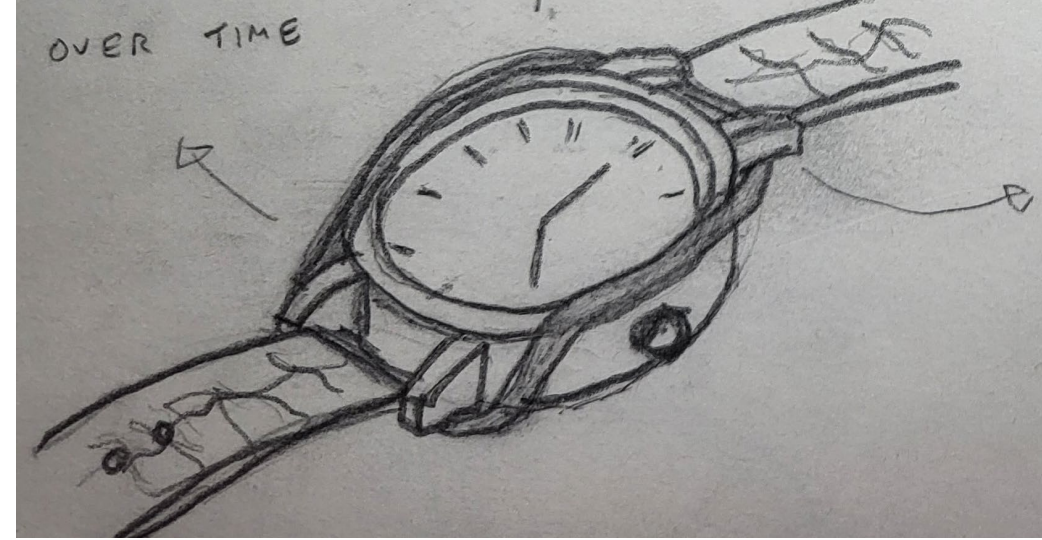


# IMPROVEMENTS



This design is inspired by the Casio G-Shock watches; defined by their shock-resistance, angularity and bulky aesthetic. This creates a sense of protection and security for people who don't like the sleeker design for vintage timepieces.

It does not require a crystal cover due to the bumper, which is designed to absorb any damage directed at the dial. Lug guards have been removed to prevent the case becoming too blocky and obtrusive.



Concept design to fit various bezel shapes and sizes by stretching over both sides of the strap. However, the tension level would be higher if stretched further by a larger bezel which would leave the lugs and casing under more pressure. Details could also deform.



Rendered concept for sweeping lug guards to maintain the sleek aesthetic. They also provide additional tension throughout the form to improve the clipping mechanism. Also experiments with a new Aztec-style crystal cover that leaves the date visible.